STRUCTURED ALGORITHMIC PROGRAMMING LANGUAGE APPROACH TO SYSTEM DESIGN

ABSTRACT

An algorithmic programming language approach to system design enables design, synthesis, and validation of structured, system-level specifications, and integrates system-level design into the rest of the design process. The algorithmic programming language design approach includes various techniques and tools, which can be used in combination or independently. For example, the design approach includes techniques and tools for simplifying specification of a design unit interface in a programming language specification and/or simplifying specification of synchronization and sub-design unit concurrency for a design unit. According to a first aspect of the design approach, design occurs at the algorithmic level of abstraction. According to a second aspect, the design approach leverages existing simulation technology for validation at various stages of the design flow. According to a third aspect, a design tool synthesizes a structured, programming language specification into a lower-level specification, such as a VHDL specification.